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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/431,674
Filing Date: November 01, 1999
Appellant(s): BAGGETT ET AL.

Dennis Maloney, Reg. No. 29,670
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/11/06 appealing from the Office action mailed 4/20/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

This appeal involves claims 1-34.

(4) Status of Amendments After Final

No amendment to the claims after final has been filed. The Appellant filed a request for reconsideration in response to the Final Rejection mailed 4/20/06. This request for reconsideration was received on 7/12/06 and entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6, 119, 094	LYNCH ET AL	9-2000
5, 839, 114	LYNCH ET AL	11-1998
5, 270, 921	HORNICK	12-1993
5, 897, 620	WALKER ET AL	4-1999
5, 983, 200	SLOTZNICK	11-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 11, the present claim currently recites that the availability process determines travel options using availability data has been determined to be "low-quality" and treats this data as though it were "high quality" data. It is unclear to the Examiner

how this phrase further limits claim 1, or how one set of data is treated as though it were another set of data in this claim. In particular, it is unclear what the applicant means by "low-quality data" and "high-quality data" and how the system/method would process these data in a similar or differential manner. Claims 12-13 inherit the deficiencies of claim 11 through dependency, and are therefore also rejected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4,11,13, 15,16,19, 21-23, 26 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lynch et al (US Patent No. 6,119,094). (This reference will be referred to as Lynch '094 throughout this action).

In reference to claim 1, Lynch '094 teaches a travel planning system comprising, with a processor and memory storing processes for executing on the processor (Figure 2; col. 3, lines 21-33) the processor comprising:

- a scheduling component that determines a set of travel options (i.e. transportation instances) to satisfy a user's request (column 2, lines 57-60; col. 9, lines 52-67)

- an (availability) component to search/access seat availability information from multiple sources of seat availability information, receives the instances of transportation and uses the results from a first source of multiple sources of seat availability information for a mode of transportation to determine a set of travel options (i.e. instances of transportation) (col. 6, lines 41-56; col. 7, lines 8-20; lines 29-32; col. 9, line 47-col. 10, line 5)
    - o determines quality properties of the availability information from the first source of seat availability information, with the quality properties including at least one of confidence, precision, and validity (column 2, lines 60-65; figure 3, column 6, lines 11-57, col. 7, lines 46-49)
    - o determines, based on quality properties, whether the first source of seat availability information reliable, and if the results are not reliable, the availability process executes a second set of availability queries to the first or a different one of the multiple sources of seat availability information based on the outcome of determining quality properties to provide a second set of instances of transportation for which seat is available. (See Lynch'094: col. 2, lines 60-65; col. 6, lines 22-38; Figure 3)

Lynch'094 reference states that the system determines the age of the availability data and also determines how well the availability data meet the certain parameters entered by the user (col. 6, lines 10-61). In other words, the system determines the age (e.g. reliability) and fitness or usefulness of the availability data (i.e. precision or

validity)—two qualities of the availability data. Moreover, the system submits subsequent queries to one or more CRS's (i.e. the first or a different source seat availability data) based on the outcome of a test (i.e. the evaluation of the whether the availability data is too old and therefore unreliable) to provide a second set of available instances of transportation (i.e. the results returned from the updated queries).

It is noted that the claim has been amended to recite that the quality values include at least one of confidence, precision or validity. However, it is respectfully submitted that the determination of the fitness or usefulness of the availability data (i.e. precision or validity) performed by the Lynch system addresses these additional limitations. (col. 6, lines 10-61)

Lynch'094 teaches a system with at least one component to perform the recited functionalities of the availability component. However, Lynch'094 does not expressly disclose whether a single component performs all of the recited functions or whether these functions are carried out by more than one component. However, at the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the system of Lynch'094 to have the functions are performed by a single (availability) component. One would have been motivated to do this to maximize the use of each component in a system with limited resources.

In reference to claim 2, Lynch'094 teaches a system wherein the availability component determines whether the source of availability information is reliable, and if the results are reliable, the availability component returns the results (See Lynch'094,

col. 6, lines 41-col. 7, line 5). A component of the system determines whether a predetermined time period has elapsed since the data in system inventory database has been obtained (i.e. determining whether the data is outdated/not reliable), but only updates the results when the data is deemed unreliable (i.e. outdated). The system further processes the returned data to determine the fitness of the travel data as a solution if the time period has not elapsed. (i.e. results are reliable)

In reference to claim 3, Lynch '094 teaches that the method of claim 1 as explained in the rejection of claim 1. Furthermore, Lynch teaches a system wherein to execute a second set of seat availability queries to the first or a different one of the multiple sources, the availability process makes multiple, sequential queries to the first source or a different one of the multiple sources of seat availability information. (See Lynch'094: column 6, lines 11-38; lines 56-57) The system executes the second set of queries (e.g. when it is determined that data in the inventory database is too old.) The system repeats the data query process by querying the one or more CRS's (i.e. the first or a different source of seat availability data).

In reference to claim 4, Lynch '094 teaches that the method of claim 1 as explained in the rejection of claim 1. Furthermore, Lynch teaches a system wherein to execute a second set of seat availability queries the availability process makes multiple, simultaneous queries to multiple ones of multiple sources of seat availability information. (See Lynch'094: column 6, lines 11-38; lines 56-57) The system executes the second set of queries (e.g. when it is determined that data in the inventory database

is too old.) The system repeats the data query process by querying the one or more CRS's either simultaneously or sequentially (i.e. the first or a difference source of seat availability data).

As per claim 11, Lynch'094 teaches a system wherein a system component speculatively determines travel options using low quality as though it were high quality data. Lynch'094 reference discloses that speculative calculations (i.e. genetic algorithms) are used to develop a variety of possible travel options (speculative travel options) based loosely upon a user's travel request. (column 7, lines 29-45). The system then sifts through a plurality of candidate pool solutions of varying degrees of fitness and evaluates the fitness of the solutions in the candidate pool. In other words, data of high and low quality (i.e. high and low degrees of fitness) may be identified as possible solutions/options by the system and are both subjected to the sifting process to identify and/or refine additional travel solution sets. Thus, low quality data is treated as though it were high quality data.

While the Lynch'094 reference teaches a system with at least one component to perform the recited functionalities of the availability component, it does not expressly state whether a single component (i.e. an availability process) performs all of the recited functions or whether these functions are carried out by more than one component. However, one having ordinary skill in the art at the time of the Applicant's invention would have found it obvious to modify the system of Lynch'094 to have the functions are performed by a single (availability) component as explained in the rejection of claim 1.

As per claim 13, Lynch'094 teaches a system wherein the speculative determination of travel options is used to decide what quality of data are needed/ what additional queries should be issued.(col. 6, lines 41-57; col. 7, lines 29-col. 8, line 10). The genetic algorithms are used to produce a set of parameters that are used to identify travel arrangements that may be suitable for a customer. Thus, the genetic algorithms help identify which availability queries will yield the most appropriate solutions and which are of higher quality (i.e. yield results that most closely match the customers travel request.)

In reference to claim 15, Lynch'094 teaches a computer program product embodied on a computer readable medium for use with a travel planning system for determining availability of a seat for a mode of transportation, comprises instructions for causing a computer to:

- receive a set of instances of transportation that satisfy a user query; (col. 4, lines 62-col. 5, line 6; col. 6, lines 41-56; col. 6, line 59-col. 7, line 2; col. 7, lines 8-20; lines 29-32; col. 9, line 47-col. 10, line 5)
- determine quality of a first set of availability information of a first source of availability information to guide a travel planning system to determine a subsequent set of instances of transportation for which a seat is available, (See Lynch'094:column 2, lines 60-65; figure 3, column 6, lines 11-61, col. 7, lines 46-49; col. 9, lines 11-30), and if the quality of the availability information is low,

- executes a second set of seat availability queries to the first or a different source of seat availability information to provide a second set of available instances of transportation from the first source or a different source of the seat availability information and;
- produce from the second set of seat availability information and a set of the instances of transportation, a set of instances of transportation for which a seat is available. (See Lynch'094: column 2, lines 60-65; figure 3, column 6, col. 6, lines 10-6, col. 7, lines 46-49; col. 9, lines 11-30)

Insofar as the system of Lynch'094 uses computers, software module(s) and/or sub-module(s) to perform the recited steps of claim 5 (col. 3, lines 21-51), it is respectfully submitted that the system/method includes a computer program product comprising instructions for causing a computer to perform the recited steps.

In the method disclosed by Lynch, the update module may update the stored availability data by querying the one or more of the CRS's if the stored data if the predetermined time period has elapsed (i.e. executing a second set of seat availability queries to the first or a different source of seat availability based on the outcome of evaluating quality of the availability information) (figure 3, col. 6, lines 10-57). Furthermore, the system of Lynch'094 repeatedly updates availability data stored in the inventory database tests the fitness of solutions, and sifts through a plurality of candidate pools (i.e. multiple sets of transportation information) to identify a plurality of low-cost travel arrangements (col. 6, lines 41-61)

Lynch'094 does not expressly disclose whether the system queries the same or different source(s) of seat availability information, but the system does repeatedly query various sources for seat availability data (col. 6, lines 22-38), thus generating multiple sets (i.e. subsequent sets) of transportation information. (i.e. first, second, third... nth sets of queries--col. 6, lines 22-38) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to query one or more different sources of seat availability information (i.e. sources of higher quality) if the results from the first are of low quality (i.e. unreliable). As suggested by Lynch'094, one would have been motivated to do this to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer while minimizing the involvement of a travel agent. (col. 1, lines 66-col. 2, line 2, lines 19-22).

In reference to claim 16, Lynch'094 teaches the computer program product of claim 15 as explained in the rejection of claim 15. Claim 16 further recites: " instructions to send the second set of seat availability queries to a different higher quality source [of] seat availability information if the results from the first source are low quality." Lynch'094 teaches a computer program product comprising instructions to send seat availability queries to a one or more computer reservation systems (sources of seat availability information) if the information is outdated (i.e. results from first source(s) are not reliable). (column 6, lines 22-25). Lynch'094 does not expressly disclose whether the system queries the same or different source(s) of seat availability information, but the system does repeatedly query various sources for seat availability data (i.e. first, second, third... nth sets of queries). (col. 6, lines 22-38) At the time of the Applicant's

invention, it would have been obvious to one of ordinary skill in the art to query one or more different sources of seat availability information (i.e. sources of higher quality) if the results from the first are of low quality (i.e. unreliable). As suggested by Lynch'094, one would have been motivated to do this to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer while minimizing the involvement of a travel agent. (col. 1, lines 66-col. 2, line 2, lines 19-22).

In reference to claim 19, Lynch '094 teaches the computer program product of claim 15 as explained in the rejection of claim 15, and wherein the multiple sources of seat availability information generate seat availability information with differing quality properties including at least one of freshness, confidence, precision, and validity. The freshness of the data (i.e. the time that has elapsed since the inventory data was obtained) varies for the sources, especially when the sources are queried sequentially (Figure 3, column 6, lines 11-17).

In reference to claim 21, Lynch'094 teaches a method for determining availability of a seat for a mode of transportation (i.e. travel service inventory), comprising:

- producing in computer system a first set of seat availability queries to send to a first source of seat availability information for a first set of instances of transportation (col. 6, lines 41-56; col. 7, lines 8-20; lines 29-32; col. 9, line 47-col. 10, line 5)
- evaluating in a computer system a quality measure of seat availability information received from the first source of seat availability information to guide a travel planning system in determining a set of instances of transportation for which a seat

is available. (column 2, lines 60-65; figure 3; column 6, lines 11-57; col. 7, lines 29-32, 46-49; col. 9, lines 11-30)

- producing in the computer system a second set of seat availability queries to send to a different source of seat availability information based on the evaluating quality of the availability information to provide the set of instances of transportation for which a seat is available. (See Lynch'094: column 6, lines 11-57; col. 7, lines 29-32, 46-49; col. 9, lines 11-30)

In Lynch '094, the age of the information is evaluated to determine whether or not a predetermined time period has lapsed since the information was last obtained. (i.e. evaluating quality properties of the availability data) (figure 3, column 6, lines 11-17). The update module (i.e. an availability process) may then update the stored availability data by querying the one or more of the CRS's if the stored data if the predetermined time period has elapsed (i.e. executing a second set of seat availability queries to the first or a different source of seat availability based on the outcome of the evaluating quality of the availability information.) (figure 3, col. 6, lines 10-57).

It is noted that the claim has been amended to recite that the system queries a different source of seat availability data. However, it is noted that the Lynch system searches a plurality of CRS's systems and performs the update feature only on those system whose data is old (i.e. once a predetermined time period). Therefore, at the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to that a different source or different sources of seat availability would be included in the second query based upon the quality of determination (i.e. age) of the

first queries. One would have been motivated to query various sources (i.e. the first and/or different sources) to ensure that the most current and accurate information could be obtained.

In reference to claim 22, Lynch'094 the method of claim 21 further comprising receiving the set of instances of transportation from a travel planning system in response to a user query. (col. 4, lines 62-col. 5, line 6; col. 6, line 59-col. 7, line 2)

In reference to claim 23, the limitations of this claim are addressed by the rejections of claims 16 and 21, and incorporated herein.

In reference to claim 26, Lynch '094 teaches the computer program product of claim 21 as explained in the rejection of claim 21, and wherein the multiple sources of seat availability information generate seat availability information with differing quality properties including at least one of freshness, confidence, precision, and validity. The freshness of the data (i.e. the time that has elapsed since the inventory data was obtained) varies for the sources, especially when the sources are queried sequentially (Figure 3, column 6, lines 11-17).

In reference to claim 29, Lynch'094 teaches the travel planning system of claim 1 as explained in the rejection of claim 1. Claim 29 further recites "wherein the actual seat availability queries that are sent to a source of airline seat availability information are selected to increase the number of available solutions found (See Lynch'094: col. 6,

lines 25-38; lines 56-57) or to increase the likelihood that the availability of the desirable solutions has been verified with a high degree of confidence." (See Lynch'094: col. 6, lines 37-57; col. 7, line 29-col. 8, line 18)." The system executes the second set of queries when it is determined that data in the inventory database is too old. The system of Lynch'094 also searches multiple reservation systems, thereby increasing the number of available solutions. Furthermore, the system of Lynch'094 repeatedly updates availability data stored in the inventory database, tests the fitness of solutions, and sifts through a plurality of candidate pools, thereby increasing the likely that the information (the desirable solutions) is accurate. (i.e. has been verified with high confidence).

In reference to claim 30, Lynch'094 teaches the travel planning system of claim 1 wherein multiple responses which contain different availability information and/or quality properties are simultaneously maintained in the travel planning system. (col. 4, lines 6-41; col. 6, lines 11-38) The inventory database maintains information from various computer reservation systems (i.e. multiple responses) on travel service inventory, available fare classes, carriers providing service, and description of available service types. (i.e. different quality properties/different seat availability information)

In reference to claim 31, Lynch '094 teaches a system further comprising a faring process that determines fares valid for at some of the instances in the set of instances of transportation. (col. 2, lines 60-65; col.8, lines 32-55)

In reference to claim 32, Lynch'094 teaches a system further comprising a faring process that determines fares valid for at least some of the instances in the set of

instances of transportation for which a seat is available. (col. 2, lines 60-65; col.8, lines 32-55)

5. Claims 5-8, 10,18,20,25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch'094 in view of Lynch et al (US Patent No. 5,839,114—referred to hereinafter as Lynch'114).

In reference to claim 5, Lynch'094 teaches the travel planning system of claim 1 as explained in the rejection of claim 1. Lynch '094 does not specifically teach that there are different costs associated with accessing the different sources of seat availability information, but does teach that the system accesses plurality of availability sources. (col. 6, lines 22-38). Lynch '114 teaches it is well known in the art that different sources of seat availability data (e.g. proprietary CRS's) often have differential costs associated with accessing/obtaining availability information. (col. 1, lines 21-38) At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art that the sources of availability data in the system of Lynch '094 would have different costs (i.e. fixed/marginal costs including time, communication, computation, and monetary costs) associated with accessing seat availability data. One would have been motivated to include these charges to ensure that the CRS providers are fairly compensated (e.g. compensated on a per use basis) for the use and maintenance of their data systems.

In reference to claim 6, Lynch '094 and Lynch'114 in combination teach the travel planning system of claim 5 as explained in the rejection of claim 5. Furthermore,

Lynch'114 teaches a travel planning system wherein a threshold is used to help control the costs of accessing availability data. The system calculates which source of seat availability data will optimize the hits-to-bookings ratio for the user (i.e. travel agency) and thereby lower the costs or fees charged to user (i.e. travel agency). (column 1, lines 26-38; col. 2, lines 31-38) The system stores the target hits-to-booking ratio (i.e. threshold) for each availability source and determines whether that source should be accessed based on its target hits-to-booking ratio (i.e. threshold) (figure 3; col. 6, lines 4-10) At the time of the applicant's invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lynch'094 with the teachings of Lynch'114 so that the travel planning system thresholds are associated with accessing availability data. One would have been motivated to do this so that the user is made aware of the costs of arranging travel and is more economical in using the resources.

In reference to claims 7 and 8, Lynch'094 does not specifically teach a method wherein the thresholds holds are timeouts or cost limits or that availability component prioritizes queries to a source to remain under the specified cost threshold. Lynch '114 teaches a system wherein the system prioritizes which availability source should be queried based on the likelihood that the user will make a reservation from that availability source (i.e. the user's hit-to-booking ratio) (column 4, lines 26-44). This ratio impacts the user's cost for accessing this data and effectively serves as a cost threshold. To lower the costs of accessing the availability source, the user must remain under certain hit-to-bookings ratio. At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of

Lynch'094 with the teachings of Lynch'114 using the rationale applied in the rejection of claim 6.

In reference to claim 10, Lynch '094 teaches the travel planning system of claim 1 as applied to the rejection of claim 1 above. Lynch'094 does not teach a system wherein the availability process determines the tradeoffs between costs of accessing the data and the properties of the response. Lynch'114 teaches a travel planning system wherein the tradeoffs between costs of accessing the data and the properties of the response are weighed. (column 2, lines 31-38; column 4, lines 26-42) The system determines the likelihood that accessing a particular CRS will result booking or not. Successful booking decreases the user's hits-to-booking ratio and lowers the cost of accessing the availability source (col. 1, lines 19-38) Accessing the source (CRS) without booking through that CRS increases the ratio and will result in the user paying (or paying more) to access the availability source. At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lynch'094 so that the cost of accessing a resource are weighed against benefits gained by accessing that resource. One would have been motivated to do this to make the system more economical and to save money and time.

In reference to claim 18, Lynch'094 teaches the computer program product of claim 15 as explained in the rejection of claim 15. Lynch '094 does not specifically teach that there are different costs associated with accessing the different sources of seat availability information, but does teach that the system accesses plurality of availability sources. (col. 6, lines 22-38) Also, Lynch'094 teaches that a threshold limit

can be set for how often the availability component accesses the sources of seat availability data (col. 6, lines 12-21), but does not specifically teach that this limit is for cost containment purposes. Lynch '114 teaches it is well known in the art that different sources of seat availability data (e.g. proprietary CRS's) often have differential costs associated with for accessing/obtaining availability information. (column 1, lines 21-38) At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art that the sources of availability data in the system of Lynch '094 would have different costs (i.e. fixed/marginal costs including time, communication, computation, and monetary costs) associated with accessing seat availability data. One would have been motivated to include these charges to ensure that the CRS providers are fairly compensated (e.g. compensated on a per use basis) for the use and maintenance of their data systems.

Furthermore, Lynch'114 teaches an automated travel planning system wherein a threshold is set to help control the costs of accessing availability data (i.e. setting a threshold limit on the availability process to access the availability sources). The system calculates which source of seat availability data will optimize the hits-to-bookings ratio for the user and thereby lower the costs or fees charged to user. (column 1, lines 26-38; col. 2, lines 31-38) The system stores the target hits-to-booking ratio (i.e. threshold) for each availability source and determines whether that source should be accessed based on its target hits-to-booking ratio (i.e. threshold) (figure 3; col. 6, lines 4-10) At the time of the applicant's invention, it would have been obvious to one of ordinary skill in the art to further modify the system (and computer program product) of

Lynch'094 with the teachings of Lynch'114 so that the thresholds are used to control costs associated with accessing availability data. One would have been motivated to ensure that system user is aware of the costs of arranging travel, and is therefore more economical in using the resources.

In reference to claim 20, Lynch'094 teaches the computer program product of claim 15, as explained in the rejection of claim 15. Lynch'094 does not teach that the availability process determines the tradeoffs between costs of accessing the data and the properties of the response, but does disclose that a primary goal of the automated system is minimize travel expenses for the user by developing low-cost travel options. (col. 2, lines 14-21). Lynch'114 teaches an automated travel planning system (i.e. computer instructions) to determine the tradeoffs between costs of accessing the data and the properties of the response. (column 2, lines 31-38; column 4, lines 26-42) The system determines the likelihood that accessing a particular CRS will result booking or not. Successful booking decreases the user's hits-to-booking ratio and lowers the cost of accessing the availability source (col. 1, lines 19-38) Accessing the source (CRS) without booking through that CRS increases the ratio and will result in the user paying (or paying more) to access the availability source. At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lynch'094 so that the cost of accessing a resource are weighed against benefits gained by accessing that resource. One would have been motivated to do this to minimize costs for the user seeking a plurality of low-cost travel options while also minimizing the time required to access these options (Lynch'094: col. 2, lines 14-21).

In reference to claim 25, the limitations of this claim are addressed by the rejection of claims 18 and 21, and incorporated herein.

In reference to claim 27, the limitations of this claim are addressed by the rejections of claims 20 and 21, and incorporated herein.

6. Claims 9, 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch'094 in view of Walker et al (US Patent No. 5,897,620—referred to hereinafter as Walker).

In reference to claim 9, Lynch '094 teaches the system of claim 1 as explained in the rejection of claim 1. Claim 9 also recites: "wherein the first or a different one of the multiple sources of seat availability information is a source of predicted availability information..." Lynch'094 does not specifically disclose that that the sources of availability data are sources of predicted availability information, but does teach querying a plurality of availability data sources that have different data quality properties associated the replies generated from the queries. (Figure 3, column 6, lines 11-17) The freshness of the data (i.e. the time that has elapsed since the inventory data was obtained) varies for the sources. Walker teaches that the use of forecasted inventory data (i.e. predicted availability information) from a predicted availability source (e.g. RMS) for arranging and pricing travel/ transportation options is well known in the art. (col. 6, lines 9-26). At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to include predicted availability information (i.e. forecasted inventory data) among the availability sources queried to determine a set of

potential travel options for a user in the system of Lynch'094. One would have been motivated to include forecasted inventory data to permit travel service providers (e.g. airlines) to post travel information for users to review and/or select while minimizing system downtime required by constant updates with real-time availability data.

In reference to claim 17, Lynch'094 teaches that the computer program product of claim 15 as explained in the rejection of claim 15. Lynch'094 further teaches a computer implemented method wherein a system component (i.e. the availability component) can make multiple, sequential queries to send availability queries to multiple ones of multiple sources of seat availability information. (column 6, lines 11-38) Lynch'094 does not specifically disclose that that the sources of availability data include sources of predicted availability information (i.e. predictor sources of seat availability information). Walker teaches that the use of forecasted inventory data (i.e. predicted availability information) from a predicted availability source (e.g. RMS) for arranging and pricing travel/ transportation options is well known in the art. (col. 6, lines 9-26). At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to that the availability sources queried to determine a set of potential travel options for a user in the system of Lynch'094 include predictor sources of seat availability information (i.e. forecasted inventory data). One would have been motivated to include forecasted inventory data in the data provided by the availability sources to permit travel service providers (e.g. airlines) to post travel information for users to review and/or select while minimizing system downtime associated with constant real-time availability data updates.

In reference to claim 24, the limitations of this claim are addressed by the rejections of claims 17 and 21, and incorporated herein.

7. Claim 12 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch'094 in view of Hornick (US Patent No. 5,270,921).

As per claim 12, Lynch'094 discloses a system wherein travel options are speculatively determined using low quality data as though it were high quality data, but does not specifically teach that the low quality data are guessed at or computed internal to the travel planning process. Hornick discloses a system wherein availability data are computed or guessed internal to the travel planning process. (col. 2, lines 41-53; col. 6, lines 57-62) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the system of Lynch'094 with the teaching of Hornick to include the projected (i.e. computed or guessed at) availability data for use in the travel planning process. One would have been motivated to do this so that travel providers could offer customers a large selection of potential travel options while accounting for the probabilistic and complex nature of demand, to maximize travel revenue. (Hornick: col. 2, lines 21-53)

In reference to claims 33-34, Lynch'094 teaches a system further comprising a faring process that determines fares valid for at least some of the instances in the set of instances of transportation (e.g. those for which a seat is available) (col. 2, lines 60-65; col.8, lines 32-55). However, Lynch'094 does not expressly disclose the order in which the processes are executed. Hornick teaches a system/ method wherein seat

availability is determined after a faring process (i.e. availability process is executed after a faring process). (col. 6, lines 44-62) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the system of Lynch'094 with the teaching of Hornick to allow a faring process to be executed prior to an availability determination (i.e. availability process). As suggested by Hornick, one would have been motivated to include this feature to maximize travel service provider revenue while accounting for the probabilistic and complex nature of demand. (Hornick: col. 2, lines 21-53)

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch'094 in view of Slotznick (US 5,983,200).

Lynch'094 teaches the system of claim 1 as explained in the rejection of claim 1. Lynch '094 further teaches a system wherein fare information is determined (i.e. valid fares for some of the travel options are determined) (col. 2, lines 60-65; col. 8, lines 32-55). Lynch'094 does not specifically teach that the travel planning data are sent to an intelligent client for further processing. Slotznick teaches a system wherein an intelligent client (agent) is used to accomplish delegated tasks such as preparing and arranging travel reservations. (col. 13, lines 1-23). Furthermore, Slotznick teaches that the intelligent agent accumulates a learned knowledge database of details related to a task each time it performs that task. At the time of the applicants' invention, it would have been obvious to one of ordinary skill in the art to modify the system taught by Lynch'094 with the teachings of Slotznick so that a the client computer (i.e. travel

agency workstation) functions as an intelligent client which can further process and integrate the travel planning data (i.e. scheduling, fare, and availability information) and schedule travel arrangements. One would have been motivated to do this to make the travel planning system and method of Lynch'094 faster and more efficient. As indicated by Slotznick, the using an intelligent agent speeds the execution of tasks and ensures that accumulated pertinent data (e.g. traveler preferences) are incorporated in travel planning process. (column 3, lines 45-50)

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Lynch et al (US Patent No. 6,119,094-- referred to as Lynch '094) in view of Official Notice. (This reference will be throughout this action).

In reference to claim 28, Lynch'094 teaches the system of claim 1 as explained in the rejection of claim 1. Lynch'094 also teaches the use of genetic algorithms to sift through possible solutions (candidate pools) to determine the fitness of various travel options (i.e. solution) (col. 6, lines 41-56). Lynch'094 does not specifically disclose the use of "probabilistic confidence bounds describing uncertainty in measurements" for the solutions. However, it is respectfully submitted that the use of confidence intervals (e.g. "probabilistic confidence bounds describing uncertainty in measurements") are commonly used in mathematic/probability calculations. At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to include such confidence intervals in the calculations performed by the system of Lynch'094. One would have been motivated to do this to monitor the accuracy and reliability of the

obtained data, and to enable users to adjust the intervals to increase or decrease the number of candidate pools created to further assist the system in identifying a plurality of low-cost travel options for travelers.

(10) Response to Argument

(A) The Appellant argues that claim 11 is definite, and meets the requirements of 35 USC 112, 2nd paragraph. The Appellant argues that the claim language with its recitation of "low quality" and "high quality" data would be understood by one of ordinary skill in the art in light of the specification.

In response, the Examiner respectfully disagrees and maintains that is it unclear how one set of data is treated as though it were another set of data in the instant claim. In particular, it is unclear what the applicant means by "low-quality data" and "high-quality data" and how the system/method would process these data in a similar or differential manner.

It is noted that the Appellant states that there are several passages in the specification, which would provide claim interpretation guidance for one of ordinary skill in the art. For example, the Appellant has cited page 8, lines 23-32 of the Appellant's specification. However, while this passage explains that different sources of data have different properties, it does not discuss the evaluation or ranking of these properties in terms of "high quality" vs. "low quality." The Appellant also cites a second passage from the specification (page 17, lines 2-14), in which low cost data is equated with low quality. However, the passage also fails to correlate to the claim language, as it never

explains how the seemingly arbitrary distinction between high versus low quality data is made. Thus, the recited step in claim 11 of "speculatively determin[ing] the travel options using availability data that is determined to be low quality as though the data were high-quality data" remains unclear, vague and indefinite.

Therefore the 112, 2nd paragraph rejection of claim 11 has been maintained. Claims 12-13 inherit the deficiencies of claim 11 through dependency, and are therefore also rejected.

(B) The Appellants argues that the Lynch'094 reference does not disclose seat availability information.

In response, the Examiner respectfully disagrees with the Applicant's interpretation of the art, and in particular with the Applicant's narrow interpretation of the term "seat availability data" in the current claim language. As explained in the current art rejection, the Lynch reference does in fact process several types of travel information, including availability data. (See Lynch'094: column 2, lines 60-65; figure 3, col. 6, lines 6-10, col. 7, lines 46-49; col. 9, lines 11-30—querying one or more central reservation systems/ CRS's) The system of Lynch'094 retrieves inventory information for modes of transportation from one or more computer reservation systems. (col. 6, lines 31-38) The system/method of Lynch'094 sifts through the retrieved data to find solutions, which match the users parameters. In each case, the Examiner interprets the

transportation inventory data and the solutions that match the parameters for a user seeking to book travel arrangements to include seat availability information.

It is clear from the cited passages and further from the abstract that the Lynch '094 system "retrieves inventory... and determines a plurality of low-cost alternate travel arrangements that are available to the customer." (Lynch '094 abstract, lines 9-14). In the context of airlines flights, (col. 6, lines 6-10), it is submitted that "inventory" used to determine a plurality of low-cost alternate travel arrangements that are available to the customer, includes "seat availability data."

(C) On pages 12-13, the Appellants argue that the Lynch'094 reference does not disclose seat availability information that originated from something other than a yield management system (also known as a revenue management system).

It is presumed that the Appellant's arguments with regard to the Lynch'094 on page 12 are in reference to claim 1.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Lynch'094 reference does not disclose seat availability information that originated from something other than a yield management system) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

There is nothing in the present claim language of exemplary claim 1 to specifies or excludes any source of seat availability information (e.g. CRS's, Yield or Revenue Management Systems)

The Appellant further argues that the Lynch'094 "[f]inding a different type of source for the seat availability data would be inconsistent with the teachings of Lynch'094." It should again be noted that the features upon which appellant relies (i.e., accessing different type sources of seat availability data) are not recited in rejected claim 1. Claim 1 recites executing "a second set of availability queries to the first source or a different one of the multiple sources of seat availability data...." The current language of claim 1 does not require different types of sources.

Furthermore, including different types of sources of seat availability information does not destroy intended use of the Lynch'094 patent. As stated in the abstract, the purpose of the Lynch '094 system is to retrieve inventory and determine a plurality of low-cost alternate travel arrangements that are available to the customer." (Lynch '094 abstract, lines 9-14). One would have been motivated to include various types of seat availability sources to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer. (Lynch'094: col. 1, lines 66-col. 2, line 2, lines 19-22).

(D) On pages 11-13, the Appellant argues that Lynch'094 does not teach an availability process that can access seat availability information from multiple sources. Appellant further argues Lynch does not perform a second set of queries based upon

information from the first set of queries and does not use quality measures in retrieving data.

In response, it is respectfully submitted that the Appellant fails to appreciate the vast breadth of the claim(s), as presently recited. For instance, the Appellant asserts that the system of Lynch'094 does not determine quality properties of the availability data or the reliability of the data source. However, the Lynch reference clearly states that the system determines the age of the availability data and also determines how well the availability data meet the certain parameters entered by the user (col. 6, lines 10-61). In other words, the system determines the age and fitness or usefulness of the availability data—two qualities of the availability data.

The current claim language does not provide a definition or description of which qualities are determined by the system and the Appellant fails to point to any specific sections of the specification that define the term "quality properties." Instead, the Appellant apparently relies upon the fact that the claim recites that the quality properties are used to determine whether the data are "reliable." Again, no definition, description, or objective and quantifiable measure of "reliability" is provided in the current claim language or in sections of the specification cited by the Appellant. Therefore, the Examiner has given the claim language the broadest reasonable interpretation.

While the term "reliability" is not expressly disclosed in the cited section of the Lynch'094 reference in connection with the query and results return process and data update process, it is respectfully submitted that one of ordinary skill in the art would have reasonably understood that the age (and fitness) of the availability data are

indications of the reliability, precision, or validity of the data. The existence of the update module in Lynch'094 at least suggests that outdated availability data could make the data unreliable. Consequently, the system submits subsequent queries to one or more CRS's (i.e. the first or a different source seat availability data) based on the outcome of a test (i.e. the evaluation of the whether the availability data is too old and therefore unreliable) to provide a second set of available instances of transportation (i.e. the results returned from the updated queries).

The system of Lynch'094 retrieves inventory information for modes of transportation from one or more computer reservation systems. (col. 6, lines 31-38) Moreover, the system/method of Lynch'094 sifts through the retrieved data to find solutions, which match the users parameters. In each case, the Examiner interprets the transportation inventory data and the solutions that match the parameters for a user seeking to book travel arrangements to include seat availability information.

As to Appellant's arguments use differing quality properties in generating availability data, the Lynch reference clearly states that the system determines the age of the availability data and also determines how well the availability data meet the certain parameters entered by the user (col. 6, lines 10-61). In other words, the system determines the age and fitness or usefulness of the availability data—two qualities of the availability data.

(E) Appellant argues Lynch'094 does not disclose or suggest outputting the pricing table results from determining the reliability of the seat availability information.

In response to Appellant's argument that the references fail to show certain features of Appellant's invention, it is noted that the features upon which Appellant relies (i.e., "outputting the pricing table results") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 2 does not recite outputting pricing tables; it merely requires results to be returned. Lynch'094 teaches a system wherein the availability component determines whether the source of availability information is reliable, and if the results are reliable, the availability component returns the results (See Lynch'094, col. 6, lines 41-col. 7, line 5).

A component of the system determines whether a predetermined time period has elapsed since the data in system inventory database has been obtained (i.e. determining whether the data is outdated/not reliable), but only updates the results when the data is deemed unreliable (i.e. outdated). The system further processes the returned data to determine the fitness of the travel data as a solution if the time period has not elapsed. (i.e. results are reliable)

(F) On page 14, Appellants argue that Lynch'094 does not disclose the features of claim 3, because it does not disclose an availability process that queries sources of seat availability data. In particular Appellant's maintain that Lynch'094 does not discuss seat availability per se, and that claims 3 and 4 stand or fall together.

As previously stated, the Examiner respectfully disagrees with the Appellant's interpretation of the art, and in particular with the Appellant's narrow interpretation of the term "seat availability data" in the current claim language. As explained in the current art rejection, the Lynch reference does in fact process several types of travel information, including availability data. (See Lynch'094: column 2, lines 60-65; figure 3, col. 6, lines 6-10, col. 7, lines 46-49; col. 9, lines 11-30—querying one or more central reservation systems/ CRS's) The system of Lynch'094 retrieves inventory information for modes of transportation from one or more computer reservation systems. (col. 6, lines 31-38)

The Appellants have apparently given a narrower interpretation to the term "seat availability data" than is supported by the claim language or the Appellant's specification. However, the Examiner respectfully submits that the "plain meaning" of the phrases "seat availability data" and sources of seat availability data have been applied in interpreting the claim language and in applying the prior art.

It is clear from the cited passages in the rejection of claims 1 and 3, and further from the abstract that the Lynch '094 system "retrieves inventory... and determines a plurality of low-cost alternate travel arrangements that are available to the customer." (Lynch '094 abstract, lines 9-14). In the context of airlines flights, (col. 6, lines 6-10), it is submitted that "inventory" used to determine a plurality of low-cost alternate travel arrangements that are available to the customer, includes "seat availability data."

Furthermore, Lynch'094 teaches a system wherein to execute a second set of seat availability queries to the first or a different one of the multiple sources, the

availability process makes multiple, sequential queries to the first source *or* a different one of the multiple sources of seat availability information. (See Lynch'094: column 6, lines 11-38; lines 56-57) The system executes the second set of queries (e.g. when it is determined that data in the inventory database is too old.) The system repeats the data query process by querying the one or more CRS's (i.e. the first or a different source of seat availability data).

(G) Appellant argues that Lynch'094 does not disclose a system wherein low-quality data are treated and processed the same way in which high quality data are treated and processed. Appellant further states that claims 11 and 13 stand or fall together.

In response, claim 11 has been rejected under 35 USC 112, 2nd paragraph because it was the claim language was unclear to the Examiner. (See paragraph 10A and the rejection of claims 11-13 under 35 USC 112, 2nd paragraph). The Examiner has maintained this 112, 2nd par. rejection throughout prosecution. However, the Examiner interpreted the claim language as best as possible, and applied art accordingly.

Lynch'094 teaches a system wherein a system component speculatively determines travel options using low quality as though it were high quality data. Lynch'094 reference discloses that speculative calculations (i.e. genetic algorithms) are used to develop a variety of possible travel options (speculative travel options) based loosely upon a user's travel request. (column 7, lines 29-45). The system then sifts through a plurality of candidate pool solutions of varying degrees of fitness and evaluates the fitness of the solutions in the candidate pool. In other words, data of high

and low quality (i.e. high and low degrees of fitness) may be identified as possible solutions/options by the system and are both subjected to the sifting process to identify and/or refine additional travel solution sets. Thus, low quality data is treated as though it were high quality data.

(H) On pages 15-17 Appellant argues that Lynch'094 fails to teach the features of claim 15 and 21. In particular, Appellant argues that Lynch'094 does not disclose sources of seat availability data and the step of determining the quality of seat availability information. (Claims 15 and 21 stand or fall together.)

In response, The Appellants have apparently given a narrower interpretation to the term "seat availability data" than is supported by the claim language or the Appellant's specification. As explained in the current art rejection, the Lynch reference does in fact process several types of travel information, including seat availability data. (See Lynch'094: column 2, lines 60-65; figure 3, col. 6, lines 6-10, col. 7, lines 46-49; col. 9, lines 11-30—querying one or more central reservation systems/ CRS's) The system of Lynch'094 retrieves inventory information for modes of transportation from one or more computer reservation systems. (col. 6, lines 31-38)

It is clear from the cited passages in the rejection of claims 15 and 21, and further from the abstract that the Lynch '094 system "retrieves inventory... and determines a plurality of low-cost alternate travel arrangements that are available to the customer." (Lynch '094 abstract, lines 9-14). In the context of airlines flights, (col. 6, lines 6-10), it is submitted that "inventory" used to determine a plurality of low-cost

alternate travel arrangements that are available to the customer, includes "seat availability data."

Moreover, it is respectfully submitted Appellant fails to realize the breadth the terms "low-quality data" and "high-quality data."

Again, it is noted that the Appellant states that there are several passages in the specification, which would provide claim interpretation guidance for one of ordinary skill in the art. For example, the Appellant has cited page 8, lines 23-32 of the Appellant's specification. However, while this passage explains that different sources of data have different properties, it does not discuss the evaluation or ranking of these properties in terms of "high quality" vs. "low quality." The Appellant also cites a second passage from the specification (page 17, lines 2-14), in which low cost data is equated with low quality. However, the passage also fails to correlate to the claim language, as it never explains how the seemingly arbitrary distinction between high versus low quality data is made.

Lynch'094 discloses determining quality of a first set of availability information of a first source of availability information to guide a travel planning system to determine a subsequent set of instances of transportation for which a seat is available, (See Lynch'094:column 2, lines 60-65; figure 3, column 6, lines 11-61, col. 7, lines 46-49; col. 9, lines 11-30)

In the method disclosed by Lynch, the update module may update the stored availability data by querying the one or more of the CRS's if the stored data if the predetermined time period has elapsed (i.e. executing a second set of seat availability

queries to the first or a different source of seat availability based on the outcome of evaluating quality of the availability information) (figure 3, col. 6, lines 10-57). Furthermore, the system of Lynch'094 repeatedly updates availability data stored in the inventory database tests the fitness of solutions, and sifts through a plurality of candidate pools (i.e. multiple sets of transportation information) to identify a plurality of low-cost travel arrangements (col. 6, lines 41-61)

Lynch'094 does not expressly disclose whether the system queries the same or different source(s) of seat availability information, but the system does repeatedly query various sources for seat availability data, thus generating multiple sets (i.e. subsequent sets) of transportation information. (i.e. first, second, third... nth sets of queries--col. 6, lines 22-38) At the time of the Appellant's invention, it would have been obvious to one of ordinary skill in the art to query one or more different sources of seat availability information (i.e. sources of higher quality) if the results from the first are of low quality (i.e. unreliable). As suggested by Lynch'094, one would have been motivated to do this to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer while minimizing the involvement of a travel agent. (col. 1, lines 66-col. 2, line 2, lines 19-22).

(I) On pages 16-17, Appellant argues that the Examiner has confused sources of availability with queries. Appellant further argues that the Examiner has relied upon improper hindsight in rejecting claims 15 and 21.

Contrary to the Appellant's assertion, the Examiner has not equated various sources of availability data with sets of queries. The Examiner has merely stated the

Lynch'094 system may query the same seat availability sources (e.g. CRS#1, CRS#2, CRS#3; CRS#1, CRS#2, CRS#3), or the system may query a different set of seat availability sources (e.g. CRS#1, CRS#2, CRS#3; CRS#1, CRS#2, CRS#3, CRS#4... ; CRS#1, CRS#3,)

In either instance, the system does repeatedly query various sources for seat availability data, thus generating multiple sets (i.e. subsequent sets) of transportation information. (i.e. first, second, third... nth sets of queries) (col. 6, lines 22-38). At the time of the Appellant's invention, it would have been obvious to one of ordinary skill in the art to query one or more different sources of seat availability information (i.e. sources of higher quality) if the results from the first are of low quality (i.e. unreliable). As suggested by Lynch'094, one would have been motivated to do this to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer while minimizing the involvement of a travel agent. (col. 1, lines 66-col. 2, line 2, lines 19-22).

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In the instant case, the Examiner addressed the limitations of the claim showing a system, which assesses the "quality properties" of the data retrieved from "sources of availability data," and determines how a query should proceed based upon this assessment. The Examiner has also provided a motivation from the reference explaining why one of ordinary skill in the art would have been motivated to make this assessment based upon the reliability of the data.

Therefore, the rejections of claims 15 and 21 are proper and should be maintained.

(J) Appellant argues that Lynch'094 does not address the limitations of claims 16 and 23, which stand or fall together. In particular, Lynch fails to teach sending availability queries to a different higher quality source of seat availability information if the results from the first source are low.

In response, it is respectfully submitted Appellant fails to realize the breadth the terms "low-quality data" and "high-quality data."

Again, it is noted that the Appellant states that there are several passages in the specification, which would provide claim interpretation guidance for one of ordinary skill in the art. For example, the Appellant has cited page 8, lines 23-32 of the Appellant's specification. However, while this passage explains that different sources of data have different properties, it does not discuss the evaluation or ranking of these properties in terms of "high quality" vs. "low quality." The Appellant also cites a second passage from the specification (page 17, lines 2-14), in which low cost data is equated with low

quality. However, the passage also fails to correlate to the claim language, as it never explains how the seemingly arbitrary distinction between high versus low quality data is made.

Lynch'094 teaches a computer program product comprising instructions to send seat availability queries to a one or more computer reservation systems (sources of seat availability information) if the information is outdated (i.e. results from first source(s) are not reliable). (column 6, lines 22-25). Lynch'094 does not expressly disclose whether the system queries the same or different source(s) of seat availability information, but the system does repeatedly query various sources for seat availability data (i.e. first, second, third... nth sets of queries). (col. 6, lines 22-38) At the time of the Appellant's invention, it would have been obvious to one of ordinary skill in the art to query one or more different sources of seat availability information (i.e. sources of higher quality) if the results from the first are of low quality (i.e. unreliable). As suggested by Lynch'094, one would have been motivated to do this to maximize the likelihood that the system will identify a plurality of (low-cost) travel arrangements to be offered to a customer while minimizing the involvement of a travel agent. (col. 1, lines 66-col. 2, line 2, lines 19-22).

(K) On page 18, Appellant argues that Lynch'094 fails to disclose multiple sources of seat availability information generating seat availability information with differing quality properties including at least one of freshness, confidence, precision, or validity.

In response, it is respectfully submitted that the Appellant does not realize the breadth of the recited claim language, with terms including "quality properties." Lynch

'094 teaches the computer program the multiple sources of seat availability information generate seat availability information with differing quality properties including at least one of freshness, confidence, precision, and validity. The freshness of the data (i.e. the time that has elapsed since the inventory data was obtained) varies for the sources, especially when the sources are queried sequentially (Figure 3, column 6, lines 11-17).

Moreover, a particular CRS yields data, which may or may not be acceptable in developing travel solutions for the customers. In other words, a particular source of availability data may be determined as yielding high or low quality data depending upon the data's degree of fitness or validity (i.e. whether data fits and can be used in further refining additional travel solution sets).

(L) On page 19, the Appellant argues that Lynch'094 and Lynch'114 fails to address the limitations of claim 5. Claims 5-8, 10,18,20,25, and 27 stand or fall together.

In response, Lynch '094 does not specifically teach that there are different costs associated with accessing the different sources of seat availability information, but does teach that the system accesses plurality of availability sources. (col. 6, lines 22-38). Lynch '114 has been relied upon to disclose that it is well known in the art that different sources of seat availability data (e.g. proprietary CRS's) often have differential costs associated with accessing/obtaining availability information. (column 1, lines 21-38)

The test for obviousness is that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is *what the combined teachings of the references would have suggested to those of ordinary skill in the art.*

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). At the time of the Appellants' invention, it would have been obvious to one of ordinary skill in the art that the sources of availability data in the system of Lynch '094 would have different costs (i.e. fixed/marginal costs including time, communication, computation, and monetary costs) associated with accessing seat availability data. One would have been motivated to include these charges to ensure that the CRS providers are fairly compensated (e.g. compensated on a per use basis) for the use and maintenance of their data systems.

(M) The Appellants argue that Lynch'094 and Walker do not teach a prediction of seat availability information with different quality properties. Claims 9, 17 and 24 stand or fall together.

In response to Appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The Lynch'094 reference was relied upon as a primary reference to disclose a system for obtaining availability data of different quality properties, as explained in the rejections of claims 9, 17 and 24. Walker discloses the use of *expected* (i.e. predicted) and actual demand and how this information is used to project/predict the need for changes in inventory. (col. 4, lines 66-col. 5, line 29). Moreover, Walker expressly states that the RMS of the disclosed system predicts based on historical information

whether there will be empty seats on a given flight. (i.e. a source of predicted seat availability information)

As to Appellant's arguments regarding the type of "predictive sources" used in the Walker reference not matching the invention's predictive sources, it should be noted that the Appellant must rely upon a passage from specification, not the current claim language, to attempt to point out this distinction. Moreover, the passage cited by the Appellant does not provide a definition for sources of predicted availability data. Instead, page 10, lines 5-11, merely states that the process uses "cache or some other predictive type source..."

Appellant further challenges the Examiner's interpretation of the term "availability data." However, the Examiner submits that the term has been given its broadest reasonable interpretation in the Lynch and Walker references. In each case, the Examiner interprets the transportation inventory data to include (seat) availability information. In the context of airlines flights, it is submitted that "inventory" used to sell or determine a plurality of travel arrangements that are available to the customer, includes "seat availability data."

(N) On pages 21-22, the Appellants argue that the applied references do not disclose that limitations of claim 12.

In response to Appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986). Moreover, the test for obviousness is not whether the claimed invention is expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). A combination of references (i.e. Lynch'094 in view of Hornick) has been applied to address the limitations of claim 12.

The current claim language does not provide a definition or description of which qualities are determined by the system and the Appellant fails to point to any specific sections of the specification that define the term "quality properties." Therefore, the Examiner has given the claim language the broadest reasonable interpretation.

While the terms "high quality" and "low quality" are not expressly disclosed in the cited section of the Lynch'094 reference in connection with the query and results return process and data update process, one of ordinary skill in the art would have reasonably understood that the age (and fitness) of the availability data are indications of the reliability of the data. The existence of the update module in Lynch'094 at least suggests that outdated availability data could make the data unreliable. Consequently, the system submits subsequent queries to one or more CRS's (i.e. the first or a different source seat availability data) based on the outcome of a test (i.e. the evaluation of the whether the availability data is too old and therefore unreliable) to provide a second set of available instances of transportation (i.e. the results returned from the updated queries).

Lynch'094 does not specifically teach that the low quality data are guessed at or computed internal to the travel planning process. Hornick discloses a system wherein availability data are computed or guessed internal to the travel planning process. (col. 2, lines 41-53; col. 6, lines 57-62) At the time of the Appellant's invention, it would have been obvious to one of ordinary skill in the art to modify the system of Lynch'094 with the teaching of Hornick to include the projected (i.e. computed or guessed at) availability data for use in the travel planning process with the motivation of offering customers a large selection of potential travel options while accounting for the probabilistic and complex nature of demand, to maximize travel revenue. (Hornick: col. 2, lines 21-53)

(O) On pages 22-23, Appellant argues that Hornick does not perform an availability check before faring. Appellant further argues that Hornick is a revenue management system and not a travel planning system.

In response, it should be noted that nothing in the current claim language precludes revenue management systems. Moreover, revenue management is a part of the travel planning process. Therefore, the Examiner respectfully disagrees with Appellant's suggestion that the Hornick reference is somehow nonanalogous because it is a revenue management system.

Lynch'094 teaches a system further comprising a faring process that determines fares valid for at least some of the instances in the set of instances of transportation (e.g. those for which a seat is available) (col. 2, lines 60-65; col.8, lines 32-55).

However, Lynch'094 does not expressly disclose the order in which the processes are executed.

Hornick teaches a system/ method wherein seat availability is determined after a faring process (i.e. availability process is executed after a faring process). (col. 6, lines 44-62) At the time of the Appellant's invention, it would have been obvious to one of ordinary skill in the art to modify the system of Lynch'094 with the teaching of Hornick to allow a faring process to be executed prior to an availability determination (i.e. availability process). As suggested by Hornick, one would have been motivated to include this feature to maximize travel service provider revenue while accounting for the probabilistic and complex nature of demand. (Hornick: col. 2, lines 21-53)

(P) The Appellant argues that claim 14 is patentable over Lynch'094 in view of Slotznick, because Slotznick does not teach an intelligent client for processing and integrating scheduling and fare information and availability data in a travel planning system.

In response to Appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The Lynch'094 provides a travel planning system as set forth in claim 1 while the Slotznick reference was relied upon to disclose the use of an intelligent client (agent) to

accomplish delegated tasks such as preparing and arranging travel reservations. (i.e. further processing and integration of travel data) (column 13, lines 1-23). At the time of the Appellants' invention, it would have been obvious to one of ordinary skill in the art to modify the system taught by Lynch'094 with the teachings of Slotznick so that the client computer (i.e. travel agency workstation) functions as an intelligent client which can further process and integrate the travel planning data and schedule travel arrangements. As suggested by Slotznick, one would have been motivated to do this to speed the execution of tasks and to ensure that accumulated pertinent data (e.g. traveler preferences) are incorporated in travel planning process. (col. 3, lines 45-50), thereby making the travel planning system and method of Lynch'094 faster and more efficient.

(Q) The Appellants argue that the combination of Lynch'094 in view of Official Notice (applied to claim 28) in the rejection fail to teach the features of base claim 1.

The arguments regarding claim 28 are addressed by the arguments regarding claim 1.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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